## REMARKS

Claims 1-58 have been examined.

*Claim Rejections – 35 U.S.C. § 101*

As noted above, claims 57 and 58 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. In order to expedite prosecution, Applicants amend the Specification by this Amendment. Since the amendment does not require any further consideration and/or search, Applicants respectfully request entry of the amendment.

In view of the amendment, Applicants respectfully submit that claims 57 and 58 comply with the requirements of 35 U.S.C. § 101. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 101 rejection.

*Claim Rejections – 35 U.S.C. § 103*

Claims 20-23, 29, 30, 32, 39-41, 47, 48, and 50 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,502,492 to Jung in view of U.S. Patent No. 4,944,023 to Imao *et al.* ("Imao").

Claims 24, 28, 31, 42, 46, and 49 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Jung in view of Imao, and further in view of U.S. Patent No. 5,903,669 to Hirabayashi.

Claims 1-19, 25-27, 33-38, 43-45, and 51-58 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Jung in view of Imao and Hirabayashi, and further in view of U.S. Patent No. 5,796,434 to Lempel.

For *at least* the following reasons, Applicants respectfully traverse the rejection.

<u>Claims 20-23, 29, 30, 32, 39-41, 47, 48, and 50</u>

Applicants submit that claim 20 is patentable over the proposed combination of Jung and Imao. For example, claim 20 relates to a method of determining <u>a block mode</u>. The method comprises, *inter alia*, performing motion estimation on an input video data block in a mode of first sub blocks thereof using a predetermined reference picture and a predetermined measure function for motion estimation, and obtaining values of the measure function and motion vectors for the respective first sub blocks. It is determined whether there is a need to perform motion estimation on the video data block in a mode of second sub blocks thereof which are smaller than the mode of the first sub blocks. When there is no need to perform motion estimation on the video data block in the mode of the second sub blocks, **a block mode** <u>of the video data block is determined depending on whether motion vectors of the first sub blocks are similar.</u>

In the previous Amendment, it was submitted that Jung does not disclose determining <u>a block mode</u> of the video data block depending on whether motion vectors of the first sub blocks are similar (see previous Amendment, pages 23 and 24). For example, it was submitted that as the Examiner correctly acknowledges, in Jung the panning vector itself is determined based on the motion vectors of the subblocks within the subject panning block (Jung, col. 5, lines 16-29). However, the <u>block mode</u> in Jung is not determined depending on whether motion vectors of the subblocks are similar. Rather, the block mode in Jung, which is Jung's output of the motion vector detecting apparatus, is based on a signal which represents the difference between the current frame block and the motion-compensated previous frame block (Jung, col. 5, lines 30-51).

Specifically, in the aforementioned portion of Jung, it is explicitly disclosed that when

the mean absolute value of the difference signal is greater than the predetermined reference

value, the comparator 48 allows the multiplexer 28 to select the subblock motion vector as an

output of the motion vector detecting apparatus.  On the other hand, when the mean absolute

value of the difference signal is smaller than the reference value, the comparator 48 allows the

multiplexer 28 to select the panning vector as the output of the motion vector detecting

apparatus.  As such, the selection of the output (either the motion vector of the subblock, or the

motion vector of the panning block) is based on the difference between the current frame block

and the motion-compensated previous frame block, and is not selected based on whether motion

vectors of the subblocks are similar as required by claim 20.

In response, in the current Office Action, the Examiner contends that "while it is true that

ultimately, the block mode is determined based on the comparison of a motion compensated

block with an original reference block (column 5: lines 30-51), the choice between a subblock

motion vector and a panning vector (column 5: lines 43-51) may only be offered when choices of

both motion vectors exist.  However, when the number of identical subblocks is smaller than the

threshold number, (that is, when motion vectors of sub blocks are not similar, to use the language

of claim 20 of the present invention), there is no overall panning motion vector (column 5: lines

21-25).  In this case, the multiplexer 28 is only left with a Hobson's choice of the block mode in

which the plurality subblock motion vector is used (column 5: lines 46-48).  Then, since in Jung,

even the option and availability of block mode choice is dependent on the similarity of

subblocks, the block modes themselves are inherently determined by the similarity.  Therefore,

the rejection of claim 20 over Jung is respectfully maintained" (Office Action, page 3, last

paragraph continuing to page 4, emphasis added).  Applicants respectfully submit that the

teachings of Jung are being misinterpreted in the Office Action.

For instance, it is incorrectly asserted that Jung's multiplexer 28 is only left with a

Hobson's choice of the block mode.  Such an assertion fails to account for Jung's motion vector

determination unit 40 in FIG. 2.  That is, Jung never discloses or suggests that this motion vector

determination unit 40 is <u>inactive</u> when there is no overall panning motion vector.  Jung only

discloses that when the number of motion vectors of subblocks which have an identical

displacement (wherein the subblocks are within a subject panning block) is less than the

predetermined threshold number, the value of the panning vector is set as "0" (Jung, col. 5, lines

20-23).  Jung, however, does not disclose that in this case, the components of the motion vector

determination unit 40 cease to operate.  Otherwise, the multiplexer 28 which outputs the motion

vector (either the motion vector of the subblock, or the motion vector of the panning block)

could not function because the output of the multiplexer 28 is based on the output of the

comparator 48 which is part of the motion vector determination unit 40.  Therefore, the

multiplexer 28 is never left with only one choice, contrary to the assertions in the Office Action.

Further, even assuming that the multiplexer 28 is only left with one option when the

panning vector is set to "0", the reasoning behind the statement in the Office Action that the

"option and availability of block mode choice is dependent on the similarity of subblocks, the

block modes themselves are <u>inherently</u> determined by the similarity" (emphasis added) is based

on the <u>probability</u> that for a given current frame L2 and previous frame L4 (see FIG. 2 of Jung),

the number of identical subblocks is smaller than the predetermined threshold number.  The

MPEP, in § 2112.IV, dictates however that:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by **probabilities or possibilities**. **The mere fact that a certain thing may result from a given set of circumstances is not sufficient.**' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (emphasis added where underlined and bolded).

Here, the proposed scenario presented in the Office Action is based on nothing more than a specific set of circumstances (the panning vector being set to "0") based on the probability/possibility that the number of identical subblocks is smaller than the predetermined threshold number. Thus, the Office Action does not meet the requirements for making a prior art rejection based on inherency.

Moreover, as noted previously, the block mode in Jung (output of the multiplexer 28) is based on a signal which represents the difference between the current frame block and the motion-compensated previous frame block, where the motion-compensated previous frame block is generated based on the panning vector of the subject panning block (Jung, col. 5, lines 30-51). That is, Jung's motion vector determination unit 40 is never deactivated. Thus, the block mode in Jung is not determined based on whether the motion vectors of subblocks within the panning block are similar or not.

Imao is only relied on to teach recursively dividing image blocks into subblocks. See Office Action at page 8. Imao, however, also does not teach or suggest that when there is no need to perform motion estimation on a video data block in a mode of the second sub blocks, **a**

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**block mode** of the video data block is determined depending on whether motion vectors of the first sub blocks are similar as set forth in claim 20.

In view of the foregoing, Applicants respectfully submit that Jung alone, or in combination with Imao, does not teach or suggest the above-noted features of claim 20. Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection of claim 20 is respectfully requested.

Claim 39 recites features similar to those discussed above with respect to claim 20. Therefore, claim 39 is patentable for *at least* reasons similar to those given above with respect to claim 20.

Claims 21-23, 29, 30, 32, 40, 41, 47, 48, and 50 are patentable *at least* by virtue of their dependency, as well as their additionally recited elements.

Claims 24, 28, 31, 42, 46, and 49

Claims 24, 28, 31, 42, 46, and 49 depend from claims 20 or 39. Since Hirabayashi does not cure the deficient teachings of Jung and Imao with respect to claims 20 and 39, claims 24, 28, 31, 42, 46, and 49 are patentable *at least* by virtue of their dependency.

Claims 1-19, 25-27, 33-38, 43-45, and 51-58

Applicants respectfully submit that claim 1 is patentable over the alleged combination of Jung, Imao, and Hirabayashi. For example, claim 1 recites that when there are two adjacent first sub blocks using the same reference picture, a reference picture and a block mode are determined depending on whether two motion vectors are similar. The Examiner alleges that "the method of claim 1 is considered equivalent to the method of claims 20 and 24-26 for a bidirectional

picture". See Office Action at page 14, and last Office Action dated December 21, 2007 at page 12.

It was submitted in the previous Amendment that the Applicants do not acquiesce to this interpretation of the claim. In response, the Examiner states that "Applicant is reminded that a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references is not considered responsive to an adverse action. See 37 CFR 1.111(b)".

Applicants submit that in the previous Amendment, it was submitted that claim 1 is patentable for *at least* reciting "determining a block mode depending on whether two motion vectors are similar", which as shown above, is not taught or suggested by Jung. Therefore, Applicants did specifically point out how the language of the claims patentably distinguishes from the prior art of record. Moreover, the Examiner acknowledges this point also in the second full paragraph on page 4 of the Office Action.

Regarding the previously submitted statement that the Applicants do not acquiesce to the Examiner's interpretation of the claim as being equivalent to the method of claims 20 and 24-26 for a bidirectional picture, Applicants maintain this position since the Examiner again makes this generalization in the current Office Action on page 14.

Claims 12, 57, and 58 recite elements similar to those discussed above with respect to claims 1 and 20. Therefore, claims 12, 57, and 58 are patentable for *at least* reasons similar to those given above with respect to claims 1 and 20.
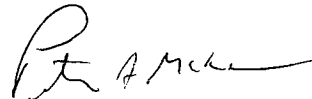
Claims 2-11, 13-19, 25-27, 33-38, 43-45, and 51-56 are patentable *at least* by virtue of their dependency, as well as their additionally recited elements.

## *Conclusion*

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

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